

REMARKS

Reconsideration of the application in view of the following remarks is respectfully requested.

Status of the Claims

Claims 1, 5-7, 9, 11, 12, 16, 37-39 and 41 were pending in the application.

Claims 39 and 41 are withdrawn.

Claims 1, 5-7, 9, 11, 12, 16, 37 and 38 stand rejected.

No new matter is added.

Rejections Under 35 U.S.C. § 112

Claims 1, 5-7, 9, 11-12, 16 and 37-38 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. The Examiner states that the Specification does not enable one of ordinary skill in the art to make or use a magnetically biasing means comprising one or more magnets each of which is positioned so as to urge both axially floating stationary seal face members towards said rotary seal face member.

It is respectfully submitted that the Specification describes a mechanical seal with a magnetically biasing means comprising one or more magnets each of which is positioned so as to urge both axially floating stationary seal face members towards the rotary seal face member. Thus, a person of skill in the art would be enabled to make and use the invention as claimed. For example, the Specification describes an embodiment of a mechanical seal in which inboard 80 and outboard stationary seal face assemblies are identical and include stationary seal face holders 82 made of steel. The bar magnets 84 attract the seal face members toward the rotary seal face member to achieve interface pressure between the seal faces 80, 87 and 81, 87. See Specification, page 14, line 30 to page 15, line 10 and Fig. 6A.

Accordingly, it is respectfully submitted that the Specification would enable a person of ordinary skill to make and use a mechanical seal in which a mechanically biasing means includes one or more magnets, each of which is positioned so as to attract both axially floating stationary seal face members. Thus, the Specification enables a person of ordinary skill to also make and use a

mechanical seal in which a mechanically biasing means includes one or more magnets each of which is positioned so as to *urge* both axially floating stationary seal face members, where the word “urge” is defined as: to force or drive forward or onward; impel.¹ Thus, the scope of claim 1 includes the embodiment described in the Specification and discussed above in which each magnet attracts, or impels, both axially floating stationary seal face members toward the rotary seal face member.

Reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. § 112, first paragraph, is respectfully requested.

Rejections Under 35 U.S.C. § 103

Claims 1, 5-7, 9, 11-12, 16 and 37-38 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 3,379,443 to Park et al. (“Park”) in view of U.S. Patent No. 6,805,358 to Dawson et al. (“Dawson”).

Independent claim 1 of the present application recites first and second axially floating stationary seal face members disposed on opposite sides of a rotary seal face member and “means for magnetically biasing said floating seal face members towards said rotary seal face member, said axially floating seal face members and said biasing means being rotationally fixed relative to each other” and “wherein said magnetically biasing means comprises one or more magnets each of which is positioned so as to urge both said axially floating stationary seal face members towards said rotary seal face member.” Because the stationary seal face members on either side of the rotary seal face member are axially floating and urged toward the rotary seal face member, the magnetically biasing means is able to adjust and maintain pressure between the axially floating stationary seal face members and the rotary seal face member in the case that any misalignment occurs.

It is respectfully submitted that neither Park nor Dawson teach or suggest a magnetically biasing means that is rotationally fixed relative to axially floating seal face members and positioned to urge both axially floating stationary seal face members towards the rotary seal face member. Nor would it be obvious to a person of ordinary skill in the art to combine Park and Dawson to include a

¹ The American Heritage Dictionary of the English Language, Houghton Mifflin Company, Third Edition, 1996. See attached.

magnetically biasing means including these features. In contrast, Park describes a seal with a spring 58 disposed at one end that presses a ring 46 of a stator, a ring 30 of a rotor and a thrust plate 54 of the stator together. The spring 58 of Park is not a magnetically biasing means nor is it disposed so as to urge axially floating stationary seal face members toward a rotary seal face member. With respect to Dawson, that reference describes a magnetic seal with a stator 10 including magnets 61 disposed therein and a rotor 50 made of ferromagnetic steel that is magnetically forced toward the stator 10 to maintain a seal therebetween. Dawson does not disclose a magnetically biasing means that biases axially floating seal face members toward a rotary seal face and is rotationally fixed relative to the axially floating seal face members. Instead, in the embodiments described in Dawson, the magnets disposed in one of the stator and the rotor bias the other of the stator and rotor toward the magnets. Thus, in each embodiment described in Dawson the magnets bias an element which rotates with respect thereto. There would be no reason in view of any combination of Park and Dawson for a person of ordinary skill in the art to make a seal in which a means for magnetically biasing floating seal face members is rotationally fixed relative to the floating seal face members, as recited in claim 1. Nor would there be any reason in view of any combination of Park and Dawson for a person of ordinary skill in the art to make a seal in which each magnet of a magnetically biasing means is positioned to urge both axially floating stationary seal face members towards a rotary seal face member.

For the foregoing reasons, it is respectfully submitted that any combination of Park and Dawson could not render claim 1 or any of its dependent claims 5-7, 9, 11-12, 16 and 37-38 obvious.

CONCLUSION

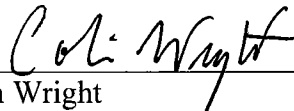
In view of the foregoing, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

The Examiner is respectfully requested to contact the undersigned at the telephone number indicated below if the Examiner believes any issue can be resolved through either a Supplemental Response or an Examiner's Amendment.

It is believed that all appropriate fees are included with these submissions. Should the U.S. Patent and Trademark Office determine that additional fees are owed or that any refund is owed for this application, the Commissioner is hereby authorized and requested to charge the required fee(s) and/or credit the refund(s) owed to our Deposit Account No. 04-0100.

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Respectfully submitted,

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Attachment – Definition from American Heritage Dictionary

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urethrectomy

canal through which urine is discharged from the bladder in most mammals and through which semen is discharged in the male. [Late Latin *urēthra*, from Greek *ourēthra*, from *ourein*, to urinate.] — **u-re'thral** *adj.*

u-re·threc·to·my (yōōr'ī-thrēk'tā-mē) *n.*, *pl.* -mies. Surgical removal of all or part of the urethra.

u-re·thri·tis (yōōr'ī-thrī'tis) *n.* Inflammation of the urethra.

u-re·thro·scope (yōō-rē'thrā-skōp') *n.* An instrument for examining the interior of the urethra. — **u-re·thros·co·py** (yōōr'ā-thrōs'ka-pē) *n.*

u-ret·ic (yōō-rēt'ik) *adj.* Of or relating to urine: urinary. [Late Latin *urēticus*, from Greek *ourētikos*, from *ourein*, to urinate.]

U·rey (yōōr'ē), **Harold Clayton**. 1893–1981. American chemist. He won a 1934 Nobel for his discovery of heavy hydrogen.

Ur·fa (dōr-fā'). A city of southeast Turkey near the Syrian border. Founded as Edessa in ancient times, it was incorporated into the Ottoman Empire in 1637 and renamed Urfa. Population, 147,488.

urge (ūrj) *v.* **urged**, **urg·ing**, **urg·es**. — *tr.* 1. To force or drive forward or onward; impel. 2. To entreat earnestly and often repeatedly; exhort. 3. To advocate earnestly the doing, consideration, or approval of; press for: *urge passage of the bill; a speech urging moderation*. 4. To stimulate; excite: "It urged him to an intensity like madness" (D.H. Lawrence). 5. To move or impel to action, effort, or speed; spur. — *intr.* 1. To exert an impelling force; push vigorously. 2. To present a forceful argument, claim, or case. — **urge** *n.* 1. The act of urging. 2. *a.* An impulse that prompts action or effort. *b.* An involuntary tendency to perform a given activity; an instinct. [Latin *urgere*.]

SYNONYMS: *urge*, *press*, *exhort*, *prod*, *prick*. These verbs mean to constrain or impel to action. *Urge* implies strong pressure or persuasion: "Urged by an extreme necessity, he had come there to steal food" (Joseph Conrad). We *urged* her to reconsider the offer, but she refused. *Press* suggests greater insistence, urgency, or importunity: "Isaacs hesitated long, but as everyone pressed him in turn, he yielded at last" (Francis Marion Crawford). *Exhort* stresses the use of earnest, urgent, often stirring admonition, advice, or appeal: "He exhorted his crews to take a good night's rest, wind up their family affairs, and make their wills" (Washington Irving). *To prod* is to goad to action as if by poking with a pointed instrument: "She reverted to her resolution to change the town—awaken it, prod it, 'reform' it" (Sinclair Lewis). *Prick* suggests driving as if with a spur: "Honor pricks me on" (Shakespeare).

ur·gen·cy (ūr'jan-sē) *n.*, *pl.* -cies. 1. The quality or condition of being urgent; pressing importance: *the urgency of the call for help; pleading with urgency*. 2. A pressing necessity.

ur·gent (ūr'jənt) *adj.* 1. Compelling immediate action or attention; pressing. 2. Insistent or importunate: *the urgent words "Hurry! Hurry!"* 3. Conveying a sense of pressing importance: *an urgent message*. [Middle English, from Old French, from Latin *urgēns*, *urgent-*, present participle of *urgere*, to urge.] — **ur·gent·ly** *adv.*

SYNONYMS: *urgent*, *pressing*, *imperative*, *exigent*. These adjectives are compared as they mean compelling immediate attention. *Urgent* often implies that a matter takes precedence over others: "My business is too urgent to waste time on apologies" (John Buchan). *Pressing* suggests an urgency that demands that prompt measures be taken: "The danger now became too pressing to admit of longer delay" (James Fenimore Cooper). *Imperative* implies a need or demand whose fulfillment cannot be evaded or deferred: *As more nations acquire nuclear weapons preventing war becomes imperative*. Something *exigent* requires swift action or remedy: *Her family's needs make exigent demands on her time*.

—urgy *suff.* Technique or process for working with: *zymurgy*. [New Latin *-urgia*, from Greek *-ourgia*, from *-ourgos*, working, from *ergon*, work. See *werg-* in Appendix.]

—uria *suff.* 1. The condition of having a specified substance in the urine: *aciduria*. 2. The condition of having a specified kind of urine: *polyuria*. [New Latin *-uria*, from Greek *-ouria*, from *ouron*, urine.]

U·ri·ah (yōō-rī'ā). In the Old Testament, an officer in the Israelite army and the husband of Bathsheba. He was sent to die in battle so that David could marry his wife.

U·ric (yōōr'ik) *adj.* Relating to, contained in, or obtained from urine.

uric acid *n.* A semisolid compound, C₅H₄N₄O₃, that is a nitrogenous end product of protein and purine metabolism and is the chief nitrogenous component of the urine in birds, terrestrial reptiles, and insects.

u·ri·co·sur·ic (yōōr'ī-kə-sōōr'ik) *adj.* Promoting the excretion of uric acid in the urine. [From *URIC* + *URIC*.]

u·ri·co·tel·ic (yōōr'ī-kə-tēl'ik) *adj.* Excreting uric acid as the chief component of nitrogenous waste. — **u·ri·co·tel·ism** (-kə-tēl'iz'm, -kōt'l-iz'm) *n.*

u·ri·dine (yōōr'ī-dēn') *n.* A white, odorless powder, C₅H₄N₂O₆, that is the nucleoside of uracil, important in carbohydrate metabolism, and used in biochemical experiments.

U·ri·el (yōōr'ē-əl) *n.* One of the archangels named in the Apocrypha and in Hebrew tradition.

U·rim and Thum·mim (yōōr'Im ən thūm'Im, dōr'Im;

tōōm'Im) *pl.n.* Sacred objects carried inside the breastplate of the high priest of ancient Israel and used as oracular media to divine the will of God. [Partial translation of Hebrew *urim wethummim*.]

urin— *pref.* Variant of **urino—**.

u·ri·nal (yōōr'ā-nəl) *n.* 1. *a.* A fixture, typically one attached upright to a wall, used by men for urinating. *b.* A room or other place containing facilities for urinating. 2. A portable receptacle for urine. [Middle English, chamber pot, from Old French, from Late Latin *urināle*, neuter of *urinālis*, pertaining to urine, from Latin *urina*, urine. See *URINE*.]

u·ri·nal·y·sis (yōōr'ā-nāl'i-sis) *n.*, *pl.* -ses (-sēz'). *Medicine.* Laboratory analysis of urine, used to aid in the diagnosis of disease or to detect the presence of a specific substance, such as an illegal drug. [*URIN*(o) + (AN)ALYSIS.]

u·ri·nar·y (yōōr'ā-nēr'ē) *adj.* 1. Of or relating to urine, its production, function, or excretion. 2. Of or relating to the organs involved in the formation and excretion of urine.

urinary bladder *n.* An elastic, muscular sac situated in the anterior part of the pelvic cavity in which urine collects before excretion.

urinary calculus *n.* A hard mass of mineral salts in the urinary tract. Also called *cystolith*, *urolith*.

urinary tract *n.* A continuous anatomical tract, including the kidneys, ureters, and urethra, involved in the formation and excretion of urine.

u·ri·nate (yōōr'ā-nāt') *intr.v.* -**nat·ed**, -**nat·ing**, -**notes**. To excrete urine. [Medieval Latin *urināre*, *urināt-*, from Latin *urina*, urine. See *URINE*.] — **u·ri·na'tion** *n.* — **u·ri·na'tive** *adj.* — **u·ri·na'tor** *n.*

u·rine (yōōr'In) *n.* The waste product secreted by the kidneys that in mammals is a yellow to amber-colored, slightly acid fluid discharged from the body through the urethra. [Middle English, from Old French, from Latin *urina*. See *wē-r-* in Appendix.]

u·ri·nif·er·ous (yōōr'ā-nīf'ar-as) *adj.* Conveying urine.

urino— or **urin—** *pref.* Urine: *urinalysis*. [From Latin *urina*, urine. See *URINE*.]

u·ri·no·gen·i·tal (yōōr'ā-nō-jēn'i-tl) *adj.* Variant of **uro-genital**.

u·ri·nom·e·ter (yōōr'ā-nōm'i-tər) *n.* A hydrometer for measuring the specific gravity of urine.

u·ri·nous (yōōr'ā-nəs) also **u·ri·nose** (-nōs) *adj.* Of, resembling, or containing urine.

URL (yōō'ār-ēl') *n.* *Computer Science.* A statement that specifies a transmission protocol and an Internet identifying number, used chiefly for moving from site to site on the World Wide Web. [*U*(NIFORM) or *U*(NIVERSAL) *R*(ESOURCE) *L*(OCATOR).]

Ur·mi·a (dōr'mē-ā), **Lake.** A shallow saline lake of northwest Iran between Tabriz and the Turkish border. The city of **Urmia**, on the western side of the lake, is the reputed birthplace of Zoroaster. Population, 263,000.

urn (ūr)n *n.* 1. A vase of varying size and shape, usually having a footed base or pedestal. 2. A closed metal vessel having a spigot and used for warming or serving tea or coffee. 3. *Botany.* The spore-bearing part of a moss capsule. [Middle English *urne*, from Latin *urna*.]

uro— or **ur—** *pref.* 1. Urine: *uric*. 2. Urinary tract: *urology*. 3. Urea: *urethane*. [New Latin, from Greek *ouro-*, from *ouron*, urine.]

uro— or **ur—** *pref.* Tail: *urochord*. [New Latin, from Greek *ouro-*, from *oura*. See *ors-* in Appendix.]

u·ro·chord (yōōr'ā-kōrd') *n.* *Zoology.* A notochord limited to the caudal region, characteristic of the urochordates. [*URO—* + *CHORD*.]

u·ro·chor·date (yōōr'ā-kōr'dāt) *n.* A chordate marine animal of the subphylum Urochordata; a tunicate. — **urochordate** *adj.* Having a urochord.

u·ro·chrome (yōōr'ā-krōm') *n.* The yellow pigment responsible for the color of urine.

u·ro·dele (yōōr'ā-dēl') *n.* Any of various amphibians of the order Caudata, including the salamanders and newts, in which the larval tail persists in adult life. [From New Latin *Urodela*, former order name: *URO—* + Greek *dēlos*, visible; see *PSYCHEDELIC*.]

u·ro·gen·i·tal (yōōr'ō-jēn'i-tl) also **u·ri·no·gen·i·tal** (yōōr'ā-nō-) *adj.* Of, relating to, or involving both the urinary and genital structures or functions.

u·rog·e·nous (yōō-rōj'ā-nəs) *adj.* 1. Producing urine. 2. Produced or derived from urine.

u·ro·gram (yōōr'ā-grām') *n.* A radiograph of the urinary tract.

u·rog·ra·phy (yōō-rōg'rā-fē) *n.*, *pl.* -phies. Radiography of the urinary tract. — **u·ro·graph·ic** (yōōr'ā-grāf'ik) *adj.*

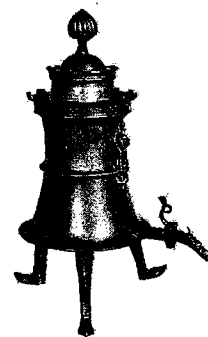
u·ro·ki·nase (yōōr'ō-kī'nās, -nāz) *n.* An enzyme in human urine that catalyzes the conversion of plasminogen to plasmin and is used in medicine to dissolve blood clots.

urol. *abbr.* 1. Urological. 2. Urology.

u·ro·lith (yōōr'ā-lith') *n.* See **urinary calculus**. — **u·ro·lith·ic** *adj.*

u·ro·lith·i·a·sis (yōōr'ā-lī-thī'ā-sīs) *n.* A diseased condition resulting from the formation of calculi in the urinary tract.

u·rol·o·gy (yōō-rōl'ō-jē) *n.* *Abbr.* **urol.** The branch of medicine that deals with the diagnosis and treatment of diseases of the



urn
c. 1450 Flemish

à pat	oi boy
à pay	ou out
à care	ōō took
à father	ōō boot
è pet	ù cut
è be	ùr urge
ī pit	th thin
ī pie	th this
īr pier	hw which
ō pot	zh vision
ō toe	à about, item
ō paw	♦ regionalism

Stress marks: ' (primary)
' (secondary), as in
dictionary (dīk'shə-nēr'ē)